

Claims

[c1] What is claimed is:

1.A method for assembling a projector, the projector comprising:

a lens;

a supporting frame including a first fixed side, a second fixed side, and an elastic protrusion, the first fixed side having a first screw hole, the second fixed side having a second screw hole;

a fixing device having a first through hole and a second through hole respectively located corresponding to the first screw hole and the second screw hole; and

an image modulator installed between the supporting frame and the fixing device, the image modulator having a first modulator side and a second modulator side;

the method comprising the following steps:

(a)screwing the first screw into the first screw hole through the first through hole to attach the fixing device onto the supporting frame, the first modulator side of the image modulator fixed neighboring to the first fixed side of the supporting frame;

(b)loosely screwing the second screw into the second screw hole through the second through hole to make the

second modulator side of the image modulator press against the elastic protrusion;
(c)projecting an image to a screen, adjusting the lens to make the image projected from the first modulator side of the image modulator focused on the screen; and
(d)adjusting the second screw in the second screw hole to position the second modulator side until the image projected from the second modulator side of the image modulator is focused on the screen.

- [c2] 2.The method of claim 1 further comprises fixing all screws with adhesive.
- [c3] 3.The method of claim 1 wherein the image modulator is a digital micromirror device (DMD).
- [c4] 4.The method of claim 1 wherein in the step (d), the supporting frame comprises two elastic protrusions, each elastic protrusion having one end connected to one of the two fixed sides and another end not connected to one of the two fixed sides.
- [c5] 5.a projector comprising:
a lens;
a supporting frame including a first fixed side, a second fixed side, and an elastic protrusion, the first fixed side having a first screw hole, the second fixed side having a

second screw hole;
a fixing device having a first through hole and a second through hole respectively located corresponding to the first screw hole and the second screw hole;
an image modulator installed between the supporting frame and the fixing device, the image modulator having a first modulator side corresponding to the first fixed side of the supporting frame, and a second modulator side corresponding to the elastic protrusion;
a first screw received within the first screw hole and the first through hole to attach the fixing device onto the supporting frame, the first modulator side of the image modulator fixed neighboring to the first fixed side of the supporting frame; and
a second screw loosely received within the second screw hole and the second through hole to make the second modulator side of the image modulator pressing against the elastic protrusion;
wherein when rotating the second screw in the second screw hole, the position of the second modulator side of the image modulator is adjusted.

[c6] 6.The projector of claim 5 wherein the supporting frame comprises two elastic protrusions, each elastic protrusion having one end connected to the first fixed side, and another end forming a gap with the second fixed

side.

- [c7] 7.The projector of claim 6 wherein the two elastic protrusions and the first fixed side form a C-shape.
- [c8] 8.The projector of claim 5 wherein the supporting frame comprises two elastic protrusions, one elastic protrusion having one end connected to the first fixed side, and another end forming a gap with the second fixed side, another elastic protrusion having one end connected to the second fixed side, and another end forming a gap with the first fixed side.
- [c9] 9.The projector of claim 8 wherein one elastic protrusion and the first fixed side form an L-shape, and the other elastic protrusion and the second fixed side also form an L-shape.
- [c10] 10.The projector of claim 5 wherein the image modulator is installed in the supporting frame on the elastic protrusion, and the lens is installed on another side of the supporting frame.
- [c11] 11.The projector of claim 10 wherein the elastic protrusion of the supporting frame is tilted toward the image modulator.
- [c12] 12.The projector of claim 5 wherein the image modulator

is a digital micromirror device (DMD).

- [c13] 13.The projector of claim 5 further comprising a flexible frame installed between the image modulator and the fixing device for tightly combining the image modulator and the fixing device.
- [c14] 14.The projector of claim 5 further comprising a conductive plastic, wherein the fixing device is a circuit board, the conductive plastic installed between the image modulator and the fixing device for electrically connecting the image modulator and the fixing device.